REMARKS

Claims 1-20 are pending in the application. Claims 1-20 stand rejected under 35 U.S.C., §112, second paragraph as being indefinite, and also stand rejected under 35 U.S.C. §102(e) as being anticipated by Aziz (U.S. Patent No. 6,597,956).

With this response, claims 1-4, 8-14, 16, 18, and 20 have been amended to address the Examiner's §112, second paragraph concerns, and claim 6 was similarly amended to provide antecedent basis for "the plurality of computer processors." Additionally, claims 5, 8-10, 15, and 18-20 have been rewritten in independent form, including all of the limitations of the claims from which they previously depended, because as explained below Applicants believe that these claims are particularly distinct from the cited art and by being recast in independent form they are ready to be allowed and issue. No new matter is added by amendment, and Applicants further submit that the claim amendments do not change the scope of the claims as they were previously examined. Reconsideration of the claims, in light of the remarks that follow, is respectfully requested.

Applicants believe that all of the claims as written are allowable. However, the arguments presented below are first directed to the subject matter of claims 8-10, 18-20, 5, and 15, because they particularly clearly distinguish Aziz.

Aziz discloses an extensible computing system (title) which can be used to create a Virtual Server Farm (VSF). The system includes a "local computing grid" with "computing elements CPU1, CPU2,...CPUn" and storage area network (SAN) switches that couple the computing elements to "disks DISK1, DISK2,...DISKn" (col. 6, lines 35-44). The system also includes virtual LAN (VLAN) switches that interconnect the computing elements, and that are coupled to the Internet (col. 6, lines 47-50). The system also includes a control plane, which is "not directly accessible through any of the computing elements in the computing grid," but rather "is implemented on a completely independent set of computing elements assigned for supervisory purposes," (col. 5, lines 44-45). To construct a VSF, the control plane "assigns or allocates" CPUs to function as load balancers/firewalls or as web servers (col. 10, lines 40-42). In configuring a VSF, the control plane sends control commands to the various entities (col. 1,

lines 19-21). Once configured, the VSF entities directly communicate with one another, with the control plane to the side. This is shown in Figures 2 and 5. For example, Aziz discloses that:

> [T]he computer can access the storage device on the Fibre-Channel SAN just as it would access a locally attached SCSI disk. Therefore, software such as boot-up software simply boots off the disk device on the SAN just as it would boot off a locally attached SCSI disk (col. 12, lines 43-49, emphasis added).

Thus, the network and storage I/O do not go the through control plane.

In contrast, claim 8 recites a platform in which network and storage I/O go through the control node. Specifically, claim 8 recites, in part:

> wherein the at least one control node receives, via the internal communication network, storage messages from said corresponding set of computer processors, and wherein the at least one control node includes logic to extract an address from a received storage message, to identify the defined corresponding address in the external storage space, and to provide messages on the external storage network corresponding to the received storage messages and having the corresponding address.

That is, the claim clearly recites a platform in which storage messages are received by the control node, and the control node actively operates on such.

Aziz does not disclose or suggest anything like the recited control node. Aziz's control plane does not receive storage messages from computer processors. Nor does Aziz's control plane include logic to extract an address from a received storage message, to identify the address in the external storage space, and then to provide messages corresponding to the received storage messages on the external storage network. In Aziz, a given CPU directly accesses the SAN disks "just as it would access a locally attached SCSI disk," and thus can boot directly or otherwise find needed information on the disk (col. 12, lines 35-46). As shown in Figures 2 and 5, the control plane is off to the side, not in the path of storage messages.

In rejecting claim 8, the Examiner cited sections of Aziz that simply disclose that the control plane can issue "control commands" to the VLAN and SAN switches via control ports (col. 10, lines 16-21), and that a communication interface can be used to provide "two-way data communication" between a computer system and a local network (col. 26, line 34-col. 27, line 6). However, the cited sections do not disclose or suggest that the control plane receives storage

messages, extracts addresses from them, and then provides corresponding storage messages on the external storage network, as recited in claim 8 as amended. Thus, Aziz does not teach or suggest claim 8.

Claim 9 includes limitations from claim 8 and should be allowable for the above reasons. It also recites further novel features, namely:

> wherein the at least one control node includes logic to buffer data corresponding to write messages received from a computer processor of said corresponding set of computer processors and to provide the buffered data in the corresponding message provided to the external storage network.

Aziz does not disclose or suggest a control node that includes logic to buffer data corresponding to write messages received from a processor, and then to provide the buffered data to an external storage network, as recited in claim 9. As discussed above, Aziz discloses configuring CPUs to directly access SAN disks "just as it would access a locally attached SCSI disk" (col. 12, lines 35-46). In rejecting claim 9, the Examiner cited a section of Aziz that describes ways to establish direct communication between the CPUs and SAN devices, e.g., with a SCSI-to-Fibre channel bridging device (col. 12, line 35-col. 13, line 16). This is the exact opposite of the claim. Neither the cited section, nor any other section of Aziz, discloses or suggest that the control plane includes logic to buffer data corresponding to write messages received from a processor, and then to provide the buffered data to an external storage network, as recited in claim 9.

Claim 10 includes limitations from claim 8 and should be allowable for the above reasons. It also recites further novel features, namely:

> wherein the at least one control node receives storage messages from the external storage network, and wherein the at least one control node includes logic to identify a corresponding computer processor or control node that the received message is responsive to, and to provide a corresponding message to the identified computer processor or control node.

Aziz does not disclose or suggest a control node that receives storage messages from an external storage network, includes logic to identify a processor or control node to which the message is responsive, and then provides a corresponding message to the processor or control node. As

discussed above, Aziz discloses configuring CPUs and SAN devices to communicate directly with each other. In rejecting claim 10, the Examiner cited sections of Aziz that simply disclose that the control plane can issue "control commands" to the VLAN and SAN switches via control ports (col. 10, lines 16-21), and that a communication interface can be used to provide "two-way data communication" between a computer system and a local network (col. 26, line 34-col. 27, line 6, and Fig. 19). The cited sections, nor any other sections of Aziz, disclose or suggest that the control plane receives storage messages, includes logic to identify a processor or control node to which the message is responsive, and to provide a corresponding storage messages to the identified processor or control node, as recited in claim 10 as amended.

Applicants submit that claims 18, 19, and 20 (now rewritten in independent form) include similar limitations to claims 8, 9, and 10, respectively, and should be similarly allowable for the above reasons.

Claim 5 recites a platform in which a control node communicates with computer processors on a particular kind of internal network, and is in the path between the processors, an external communication network, and an external storage network. Specifically, claim 5 recites, in part:

> a plurality of computer processors connected to an internal communication network;...
>
> wherein the at least one control node is connected to the internal communication network and thereby in communication with the plurality of computer processors;... and
>
> wherein the internal communication network is a point to point switch fabric.

Thus, claim 5 distinguishes between the computer processors, the control node, and the internal communication network, i.e., point to point switch fabric, through which the control node communicates with the computer processors. Aziz discloses a "wide scale computing fabric ('computing grid')," which the Examiner appears to equate with the "point to point switch fabric" of claim 5. However, the "wide scale computing fabric" or "computing grid" disclosed by Aziz is not even an internal communication network, let alone a point to point switch fabric, as is recited in claim 5. Instead, as Aziz discloses:

> The computing grid comprises a large plurality of computing elements that are coupled to one or more VLAN switches and to one or more storage area network (SAN) switches. A plurality of storage devices are coupled to the SAN switches and may be selectively coupled to one or more of the computing elements through appropriate switching logic and commands (col. 3, lines 25-28, emphasis added).

Thus, when Aziz uses the terms "computing fabric" and "computing grid," he means the computer processors themselves. Aziz does not disclose or suggest a point to point switch fabric through which the processors communicate with a control node, as recited in claim 5.

Applicants submit that as claim 15 as rewritten in independent form includes similar limitations to claim 5, it should be similarly allowable for the above reasons.

Applicants believe that the above distinctions are particularly clear, and that therefore the above claims should clearly be allowed. Applicants further believe that claim 1 sufficiently recites the distinct control node being in the path of the storage and network I/O. Specifically, claim 1 recites, in part:

> a plurality of computer processors connected to an internal communication network; [and]
>
> at least one control node in communication with an external communication network and in communication with an external storage network, having an external storage space, and wherein the at least one control node is connected to the internal communication network and thereby in communication with the plurality of computer processors.

This language shows that the control node is in the path between the processors (i.e., connected to the internal communication network and computer processors) and the external storage and external network. In contrast, the control plane of Aziz is off to the side, as can be seen in Figures 2 and 5.

Applicants submit that as claim 11 as rewritten in independent form includes similar limitations to claim 1, it should be similarly allowable for the above reasons.

Applicants first focused on some of the dependent claims because they believe the relevant claim distinctions are particularly clear and distinctive and should be found allowable. They have been cast in independent form, so that if they are found allowable (as they should be) they will be in the proper form for allowance and issue. If necessary Applicants will agree to

cancel the other claims without prejudice and pursue them in continuation or divisional applications.

In view of the above amendment, applicant believes the pending application is in condition for allowance, and respectfully requests the Examiner to allow the claims to issue. No fees are believed to be due at this time. However, please charge any fees, or credit any overpayments, to Deposit Account No. 08-0219.

Respectfully submitted,

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